



# STIC Search Report

EIC 2800

STIC Database Tracking Number: 150103

**TO:** Lissi Marquis  
**Location:** JEF- 8D61  
**Art Unit :** 2813  
**Monday, April 11, 2005**

**Case Serial Number:** 10/040627

**From:** Darcy Bates  
**Location:** EIC 2800  
**JEF- 4B68**  
**Phone:** 571-272-2540

**darcy.bates@uspto.gov**

## Search Notes

**Re: 10/040,627 US 5,422,524**

**Attached are search results.**

**No U. S. litigation was found in searches of Lexis-Nexis and Questel-Orbit databases.**

**If more searching or explanation is needed, please let me know.**

**Thanks,  
Darcy Bates**

**Smith, Teresa (ASRC)**

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**From:** Marquis, Lissi  
**Sent:** Wednesday, April 06, 2005 7:51 AM  
**To:** STIC-EIC2800  
**Subject:** LITIGATION SEARCH FOR REISSUE 10040627

here is the family history,

Thanks a million!

10040627 <snquery.pl?APPL\_ID=10040627>  
is a continuation of 08869844 <snquery.pl?APPL\_ID=08869844>  
Which is a reissue of 08152687 <snquery.pl?APPL\_ID=08152687>  
is a division of 07203972 <snquery.pl?APPL\_ID=07203972>

150103

Day : Monday  
Date: 4/11/2005  
Time: 09:42:35

## PALM INTRANET

### Application Number Information

Application Number: 10/040627 Assignments

Examiner Number: 73435 / TAMAI, KARL

Filing or 371(c) Date: 01/09/2002

Group Art Unit: 2834

IFW IMAGE

Effective Date: 01/09/2002

Class/Subclass: 310/090.000

Application Received: 01/09/2002

Lost Case: NO

Patent Number:

Interference Number:

Issue Date: 00/00/0000

Unmatched Petition: NO

Date of Abandonment: 00/00/0000

L&R Code: Secrecy Code:1

Attorney Docket Number: P64591US2

Third Level Review: NO

Secrecy Order: NO

Status: 90 /ALLOWED -- NOTICE OF ALLOWANCE NOT YET MAILED

Status Date: 02/03/2005

Confirmation Number: 3842

Oral Hearing: NO

Title of Invention: ANTIFRICTION BEARING AND ALTERNATOR INCORPORATING SAME FOR USE IN VEHICLES

Bar Code	PALM Location	Location Date	Charge to Loc	Charge to Name	Employee Name	Location
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Appln Info [Contents](#) [Petition Info](#) [Atty/Agent Info](#) [Continuity Data](#) [Foreign Data](#) [Inventors](#) [Address](#) [Fees](#) [Post Info](#) [Pre Grant Pub](#)

Search Another: Application#   or Patent#

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Day : Monday  
Date: 4/11/2005  
Time: 09:42:42



## PALM INTRANET

# Continuity Information for 10/040627

**Parent Data**

10040627

is a continuation of 08869844

Which is a reissue of 08152687

is a division of 07203972

**Child Data**

No Child Data

[Appn\[Info\]](#) [Contents](#) [Petition\[Info\]](#) [Atty/Agent\[Info\]](#) [Continuity Data](#) [Foreign\[Data\]](#) [Inventors](#) [Address](#) [Fees](#) [Post\[Info\]](#) [Pre\[Grant\]Pub](#)

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Day : Monday  
 Date: 4/11/2005  
 Time: 09:42:47


**PALM INTRANET**
**Application Number Information**Application Number: **08/869844 Assignments**Filing or 371(c) Date: **06/05/1997**Effective Date: **06/05/1997**Application Received: **06/05/1997**Patent Number: **RE37967**Issue Date: **01/21/2003**Date of Abandonment: **00/00/0000**Attorney Docket Number: **P64591US0**Status: **150 /PATENTED CASE**Confirmation Number: **6235**Examiner Number: **73435 / TAMAI, KARL**Group Art Unit: **2834****IFW IMAGE**Class/Subclass: **310/090.000**Lost Case: **NO**

Interference Number:

Unmatched Petition: **NO**L&R Code: Secrecy Code: **1**Third Level Review: **NO**Secrecy Order: **NO**Status Date: **01/02/2003**Oral Hearing: **NO**Title of Invention: **ANTIFRICTION BEARING AND ALTERNATOR INCORPORATING SAME FOR USE IN VEHICLES**

Bar Code	PALM Location	Location Date	Charge to Loc	Charge to Name	Employee Name	Location
08869844ZA	28C1	05/10/2004	No Charge to Location	No Charge to Name	NGO,CHAU	

**Appln Info** [Contents](#) [Petition Info](#) [Atty/Agent Info](#) [Continuity Data](#) [Foreign Data](#) [Inventors](#) [Address](#) [Fees](#) [Post Info](#) [Pre Grant Pub](#)

**Search Another: Application#**      **or Patent#**

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Day : Monday  
Date: 4/11/2005  
Time: 09:42:54



## PALM INTRANET

# Continuity Information for 08/869844

**Parent Data**

08869844

is a reissue of 08152687

is a division of 07203972

**Child Data**

10040627 is a continuation of 08869844

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Day : Monday  
 Date: 4/11/2005  
 Time: 09:42:59


**PALM INTRANET**
**Application Number Information**Application Number: 08/152687 Assignments

Filing or 371(c) Date: 11/16/1993

Effective Date: 11/16/1993

Application Received: 11/16/1993

Patent Number: 5422524

Issue Date: 06/06/1995

Date of Abandonment: 00/00/0000

Attorney Docket Number: P133005

Status: 150 /PATENTED CASE

Confirmation Number: 2005

Examiner Number: 69091 / HASZKO, DENNIS

Group Art Unit: 2102

Class/Subclass: 310/090.000

Lost Case: NO

Interference Number:

Unmatched Petition: NO

L&R Code: Secrecy Code:1

Third Level Review: NO

Secrecy Order: NO

Status Date: 05/26/1995

Oral Hearing: NO

Title of Invention: ANTIFRICTION BEARING AND ALTERNATOR INCORPORATING SAME FOR USE IN VEHICLES

Bar Code	PALM Location	Location Date	Charge to Loc	Charge to Name	Employee Name	Location
08152687	9210	04/01/2005	No Charge to Location	No Charge to Name	WYATT, DONNA	

**Appln Info** [Contents](#) [Petition Info](#) [Atty/Agent Info](#) [Continuity Data](#) [Foreign Data](#) [Inventors](#) [Address](#) [Fees](#) [Post Info](#) [Pre Grant Pub](#)

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Day : Monday  
Date: 4/11/2005  
Time: 09:43:04



## PALM INTRANET

# Continuity Information for 08/152687

**Parent Data**

08152687

is a division of [07203972](#)

**Child Data**

[08869844](#) is a division of [07203972](#)

10040627 is a continuation of [08869844](#)

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Day : Monday  
 Date: 4/11/2005  
 Time: 09:43:10

# PALM INTRANET

## Application Number Information

Application Number: 07/203972 Assignments

Filing or 371(c) Date: 06/08/1988

Effective Date: 06/08/1988

Application Received: 06/08/1988

Patent Number:

Issue Date: 00/00/0000

Date of Abandonment: 11/23/1993

Attorney Docket Number: P13-1560-A88

Status: 164 /ABANDONED -- FAILURE TO PAY ISSUE FEE

Confirmation Number: 5752

Examiner Number: 59883 /FOOTLAND, LENARD

Group Art Unit: 2405

Class/Subclass: 384/492.000

Lost Case: NO

Appeal Number: 931131

Unmatched Petition: NO

L&R Code: Secrecy Code:1

Third Level Review: NO

Secrecy Order: NO

Status Date: 11/23/1993

Title of Invention: ANTIFRICTION BEARING AND ALTERNATOR INCORPORATING SAME FOR USE IN VEHICLES

Bar Code	PALM Location	Location Date	Charge to Loc	Charge to Name	Employee Name	Location
07203972	28X1	09/05/2003	No Charge to Location	No Charge to Name	TAMAI,KARL	

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Date: 4/11/2005  
Time: 09:43:17

# PALM INTRANET

## Continuity Information for 07/203972

### Parent Data

No Parent Data

### Child Data

08152687 is a division of 07203972

08869844 is a division of 07203972

10040627 is a continuation of 08869844

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## Patent Search - Number: 5,422,524

No cases containing this patent number were found

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Source: [Legal > Area of Law - By Topic > Patent Law > Patents > U.S. Patents > Utility Patents](#)   
Terms: [patno=5422524](#) ([Edit Search](#))

152687 (08) 5422524 June 6, 1995

UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT

**5422524**

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[Link to Claims Section](#)

June 6, 1995

Antifriction bearing and alternator incorporating same for use in vehicles

**REISSUE:** Reissue Application filed Jun. 5, 1997 (O.G. Apr. 21, 1998) Ex. Gp.: 2102; Re. S.N. 08/869,844, (O.G. April 21, 1998)  
June 9, 2002 - Reissue Application filed Ex. Gp.: 2834; Re. S.N. 10/040,627 (O.G. August 6, 2002)  
January 21, 2003 - This Patent was reissued as Reissue Patent RE 37,967 (O.G. January 21, 2003)

**INVENTOR:** Nakamura, Sigenobu - Chiryu, Japan (JP); Siga, Tutomu - Aichi, Japan (JP); Mitani, Kenzo - Obu, Japan (JP); Fujita, Yoshiaki - Osaka, Japan (JP); Kitamura, Masayuki - Osaka, Japan (JP); Miyazaki, Hiroyuki - Osaka, Japan (JP); Hoshino, Teruo - Osaka, Japan (JP)

**APPL-NO:** 152687 (08)

**FILED-DATE:** November 16, 1993

**GRANTED-DATE:** June 6, 1995

**PRIORITY:** June 10, 1987 - 62145483, Japan (JP); June 10, 1987 - 62145484, Japan (JP)

**ASSIGNEE-AT-ISSUE:** Koyo Seiko Co., Ltd., Osaka, Japan (JP), 03  
Nippondenso Co., Ltd., Osaka, Japan (JP), 03

**ASSIGNEE-AFTER-ISSUE:** January 26, 1998 - CHANGE OF NAME (SEE DOCUMENT FOR DETAILS)., DENSO CORPORATION 1-1, SHOWA-CHO KARIYA-SHI, AICHI-KEN JAPAN, Reel and Frame Number: 09123/0625  
April 8, 2002 - CHANGE OF NAME (SEE DOCUMENT FOR DETAILS)., DENSO CORPORATION 1-1, SHOWA-CHO, KARIYA-SHI AICHI-KEN JAPAN, Reel and Frame Number: 12762/0568

**LEGAL-REP:** Nikaido, Marmelstein Murray & Oram

**PUB-TYPE:** June 6, 1995 - Utility Patent having no previously published pre-grant publication (A)

**PUB-COUNTRY:** United States (US)

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### \*Enter Search Terms

 Terms and Connectors  Natural Language

patno=5422524

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### \*"Search Connectors

Use connectors to show relationships between search terms. (Hover over a connector for description. Click a connector to add to search.)

#### Syntax Definition

<u>and</u>	and
<u>or</u>	or
<u>w/N</u>	within N words
<u>not w/N</u>	not within N words
<u>pre /N</u>	precedes by N words
<u>w/p</u>	in same paragraph
<u>not w/p</u>	not in same paragraph
<u>w/seg</u>	in same segment
<u>not w/seg</u>	not in same segment
<u>w/s</u>	in same sentence
<u>not w/s</u>	not in same sentence
<u>and not</u>	and not

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4/11/05

US 5,422,524

10/040627

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**Query/Command : file pluspat**

Selected file: PLUSPAT

Search statement 1

**Query/Command : us5422524/pn**

**\*\* SS 5: Results 1**

Search statement 6

**Query/Command : prt fu legalall max**

1 / 1 PLUSPAT - ©QUESTEL-ORBIT - image  
PN - US5422524 A 19950606 [US5422524]  
TI - (A) Antifriction bearing and alternator incorporating same for use  
in vehicles  
PA - (A) KOYO SEIKO CO (JP); NIPPON DENSO CO (JP)  
PA0 - Koyo Seiko Company, Ltd., Osaka [JP]  
Nippondenso Company, Ltd., Osaka [JP]  
IN - (A) KITAMURA MASAYUKI (JP); MIYAZAKI HIROYUKI (JP); NAKAMURA  
SIGENOBU (JP); HOSHINO TERUO (JP); SIGA TUTOMU (JP); FUJITA  
YOSHIKI (JP); MITANI KENZO (JP)  
AP - US15268793 19931116 [1993US-0152687]  
FD - Divsn of US203972 19880608 [1988US-0203972]  
PR - US15268793 19931116 [1993US-0152687]  
JP14548387 19870610 [1987JP-0145483]  
JP14548487 19870610 [1987JP-0145484]  
US20397288 19880608 [1988US-0203972]  
IC - (A) F16C-035/00 H02K-005/16  
EC - F16C-033/62  
H02K-005/173C  
PCL - ORIGINAL (O) : 310090000; CROSS-REFERENCE (X) : 029898140  
310042000  
DT - Corresponding document  
CT - US4240682; US4323401; US4429924; US4476405; US4546280; US4696581;  
US4808226  
STG - (A) United States patent  
AB - An antifriction bearing includes a fixed ring which comprises a  
steel containing up to about 10% of residual austenite. An  
alternator for vehicles includes a stator mounted on a frame, a  
rotor having its rotary shaft rotatably supported by a pair of  
bearings on the frame and a drive pulley mounted on one end of the  
shaft projecting outward from the frame. The outer ring of at  
least the bearing toward the pulley comprises a steel containing  
up to about 10% of residual austenite.

1 / 1 LGST - ©EPO  
PN - US5422524 A 19950606 [US5422524]  
AP - US15268793 19931116 [1993US-0152687]  
ACT - 19980126 US/AS01-A  
CHANGE OF NAME  
OWNER: DENSO CORPORATION 1-1, SHOWA-CHO KARIYA-SHI, AICHI;  
EFFECTIVE DATE: 19970807

4/11/05

US 5,422,524

10/040627

19980126 US/AS01-A  
CHANGE OF NAME  
OWNER: NIPPONDENSO CO., LTD.; EFFECTIVE DATE: 19970807

19980421 US/RF-A  
REISSUE APPLICATION FILED  
EFFECTIVE DATE: 19970605

20020408 US/AS-A  
ASSIGNMENT  
OWNER: DENSO CORPORATION 1-1, SHOWA-CHO, KARIYA-SHI AICHI;  
EFFECTIVE DATE: 19970807  
CHANGE OF NAME;ASSIGNOR:NIPPONDENSO CO.,  
LTD.;REEL/FRAME:012762/0568

20020806 US/RF-A  
REISSUE APPLICATION FILED  
EFFECTIVE DATE: 20020109

UP - 2004-44

1 / 1 CRXX - @CLAIMS/RRX  
**AN** - 2612541  
**PN** - 5,422,524 A 19950606 [US5422524]  
**PA** - Denso Corp JP; Koyo Seiko Co Ltd JP  
**PT** - E (Electrical)  
**ACT** - 19970605 REISSUE REQUESTED  
ISSUE DATE OF O.G.: 19980421  
REISSUE REQUEST NUMBER: 08/869844  
EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 2102  
Reissue Patent Number: USRE37967

19980126 REASSIGNED  
CHANGE OF NAME

Assignor: NIPPONDENSO CO., LTD. DATE SIGNED: 08/07/1997

Assignee: DENSO CORPORATION 1-1, SHOWA-CHO KARIYA-SHI, AICHI-KEN  
JAPAN

Reel 009123/Frame 0625

Contact: REID & PRIEST LLP NATHANIEL A. HUMPHRIES 701 PENNSYLVANIA  
AVENUE NW SUITE 800 WASHINGTON, D.C. 20004

20020109 REISSUE REQUESTED  
ISSUE DATE OF O.G.: 20020806  
REISSUE REQUEST NUMBER: 10/040627  
EXAMINATION GROUP RESPONSIBLE FOR REISSUEPROCESS: 2834

Reissue Patent Number:

20020408 REASSIGNED  
CHANGE OF NAME

4/11/05

US 5,422,524

10/040627

Assignor: NIPPONDENSO CO., LTD. DATE SIGNED: 08/07/1997

Assignee: DENSO CORPORATION 1-1, SHOWA-CHO, KARIYA-SHI AICHI-KEN  
JAPAN

Reel 012762/Frame 0568

Contact: REID & PRIEST LLP NATHANIEL A. HUMPHRIES 701 PENNSYLVANIA  
AVENUE NW SUITE 800 WASHINGTON, D.C. 20004

UP - 1999-00  
UACT- 2002-08-06  
URAS- 2002-11-12

Search statement 6

Query/Command : fam us5422524/pn

1 Patent Groups  
\*\* SS 6: Results 6

Search statement 7

Query/Command : famstate nonstop

1 / 6 PLUSPAT - ©QUESTEL-ORBIT  
PN - DE3851573 D1 19941027 [DE3851573]  
STG - (D1) Granted EP number in bulletin  
OTI - (D1) Reibungsloses Lager und mit einem solchen Lager ausgerüsteter  
Fahrzeugalternator.  
PA - (D1) NIPPON DENSO CO (JP); KOYO SEIKO CO (JP)  
IN - (D1) NAKAMURA SIGENOBU (JP); SIGA TUTOMU (JP); MITANI KENZO  
(JP); FUJITA YOSHIKI (JP); KITAMURA MASAYUKI (JP)  
IC - (D1) F16C-033/62 H02K-005/173  
PN2 - DE3851573 T2 19950323 [DE3851573]  
STG2- (T2) Trans. Of EP patent  
OTI2- (T2) Reibungsloses Lager und mit einem solchen Lager ausgerüsteter  
Fahrzeugalternator.  
PA2 - (T2) NIPPON DENSO CO (JP); KOYO SEIKO CO (JP)  
IN2 - (T2) NAKAMURA SIGENOBU (JP); SIGA TUTOMU (JP); MITANI KENZO  
(JP); FUJITA YOSHIKI (JP); KITAMURA MASAYUKI (JP)  
IC2 - (T2) F16C-033/62 H02K-005/173  
AP - DE3851573 19880609 [1988DE-3851573]  
PR - JP14548387 19870610 [1987JP-0145483]  
JP14548487 19870610 [1987JP-0145484]

1 / 1 LEGALI - ©EPO  
PN - DE3851573 D1 19941027 [DE3851573] DE3851573 T2 19950323 [DE3851573]  
AP - DE3851573 19880609 [1988DE-3851573]

**ACTE-** 19950921 DE/8363-A [-]  
OPPOSITION AGAINST THE PATENT

20000120 DE/8331-A [-]  
COMPLETE REVOCATION  
**UP -** 2003-22

2 / 6 *PLUSPAT - ©QUESTEL-ORBIT - image*  
**PN -** EP0294813 A2 19881214 [EP-294813]  
**STG -** (A2) Publ. Of applic. Without search report  
**TI -** (A2) Antifriction bearing and alternator incorporating same for use in vehicles.  
**OTI -** (A2) Reibungsloses Lager und mit einem solchen Lager ausgerüsteter Fahrzeugalternator.  
(A2) Palier antifriction et alternateur de véhicule comprenant un tel palier.  
**PA -** (A2) KOYO SEIKO CO (JP); NIPPON DENSO CO (JP)  
**IN -** (A2) KITAMURA MASAYUKI; NAKAMURA SIGENOBU; SIGA TUTOMU; FUJITA YOSHIKI; MITANI KENZO  
**IC -** (A2) F16C-033/62 H02K-005/173  
**PN2 -** EP0294813 A3 19900110 [EP-294813]  
**STG2-** (A3) Publi. Of search report  
**TI2 -** (A3) ANTIFRICTION BEARING AND ALTERNATOR INCORPORATING SAME FOR USE IN VEHICLES  
**PN3 -** EP0294813 B1 19940921 [EP-294813]  
**STG3-** (B1) Patent  
**TI3 -** (B1) Antifriction bearing and alternator incorporating same for use in vehicles.  
**OTI3-** (B1) Reibungsloses Lager und mit einem solchen Lager ausgerüsteter Fahrzeugalternator.  
(B1) Palier antifriction et alternateur de véhicule comprenant un tel palier.  
**PA3 -** (B1) KOYO SEIKO CO (JP); NIPPON DENSO CO (JP)  
**IN3 -** (B1) KITAMURA MASAYUKI (JP); NAKAMURA SIGENOBU (JP); SIGA TUTOMU (JP); FUJITA YOSHIKI (JP); MITANI KENZO (JP)  
**IC3 -** (B1) F16C-033/62 H02K-005/173  
**LA -** ENGLISH (ENG)  
**AP -** EP88109225 19880609 [1988EP-0109225]  
**PR -** JP14548387 19870610 [1987JP-0145483]  
JP14548487 19870610 [1987JP-0145484]  
**EC -** F16C-033/62  
H02K-005/173C  
**DS -** DE FR GB IT  
**DT -** Basic

1 / 1 *LEGALI - ©EPO*  
**PN -** EP0294813 A2 19881214 [EP-294813]EP0294813 A3 19900110 [EP-294813]EP0294813 B1 19940921 [EP-294813]  
**AP -** EP88109225 19880609 [1988EP-0109225]  
**ACTE-** 19881214 EP/AK-A [+]  
DESIGNATED CONTRACTING STATES:  
DE FR GB IT

19900110 EP/AK-A [+]  
DESIGNATED CONTRACTING STATES:  
DE FR GB IT

19900620 EP/17P-A [+]  
REQUEST FOR EXAMINATION FILED

4/11/05

US 5,422,524

10/040627

EFFECTIVE DATE: 19900421

19911211 EP/17Q-A [+]  
FIRST EXAMINATION REPORT  
EFFECTIVE DATE: 19911024

19940921 EP/AK-A [+]  
DESIGNATED CONTRACTING STATES:  
DE FR GB IT

19941027 EP/REF-A  
CORRESPONDS TO:  
(DE 3851573 19941027 [DE3851573])

19941110 EP/ET-A [+]  
FR: TRANSLATION FILED

19941206 EP/ITF-A [+]  
IT: TRANSLATION FOR A EP PATENT FILED  
OWNER: STUDIO TORTA SOCIETA' SEMPLICE

19950816 EP/26-A [-]  
OPPOSITION FILED  
OPPONENT: AB SKF; EFFECTIVE DATE: 19950619

19991215 EP/GBPR-A [-]  
GB: PATENT REVOKED UNDER ART. 102 OF THE EP CONVENTION DESIGNATING  
THE UK AS CONTRACTING STATE  
991024

19991215 EP/27W-A [-]  
REVOKE  
EFFECTIVE DATE: 19991024

UP - 2004-06

3 / 6 PLUSPAT - ©QUESTEL-ORBIT  
PN - JP63308218 A 19881215 [JP63308218]  
STG - (A) Doc. Laid open to publ. Inspec.  
TI - (A) ROLLING BEARING  
PA - (A) KOYO SEIKO CO; NIPPON DENSO CO  
PAO - (A) KOYO SEIKO CO LTD; NIPPON DENSO CO LTD  
IN - (A) KITAMURA MASAYUKI; MIYAZAKI HIROYUKI; HOSHINO TERUO; FUJITA YOSHIKI; NAKAMURA SHIGENOBU; MITANI KENZOU; SHIGA TSUTOMU  
IC - (A) F16C-033/62  
AP - JP14548387 19870610 [1987JP-0145483]  
PR - JP14548387 19870610 [1987JP-0145483]

4 / 6 PLUSPAT - ©QUESTEL-ORBIT - image  
PN - JP63308219 A 19881215 [JP63308219]  
STG - (A) Doc. Laid open to publ. Inspec.  
TI - (A) AC GENERATOR FOR VEHICLE  
PA - (A) NIPPON DENSO CO; KOYO SEIKO CO  
PAO - (A) NIPPON DENSO CO LTD; KOYO SEIKO CO LTD  
IN - (A) NAKAMURA SHIGENOBU; MITANI KENZOU; SHIGA TSUTOMU; KITAMURA MASAYUKI; FUJITA YOSHIKI  
IC - (A) F16C-033/62 H02K-007/08  
PN2 - JP7072565 B 19950802 [JP95072565]  
STG2 - (B) Publd. Examined patent applic.  
IC2 - (B) F16C-033/62

4/11/05

US 5,422,524

10/040627

**AP** - JP14548487 19870610 [1987JP-0145484]  
**PR** - JP14548487 19870610 [1987JP-0145484]

5 / 6 *PLUSPAT - ©QUESTEL-ORBIT - image*  
**PN** - US5422524 A 19950606 [US5422524]  
**STG** - (A) United States patent  
**TI** - (A) Antifriction bearing and alternator incorporating same for use in vehicles  
**PA** - (A) KOYO SEIKO CO (JP); NIPPON DENSO CO (JP)  
**PAO** - Koyo Seiko Company, Ltd., Osaka [JP]  
Nippondenso Company, Ltd., Osaka [JP]  
**IN** - (A) KITAMURA MASAYUKI (JP); MIYAZAKI HIROYUKI (JP); NAKAMURA SIGENOBU (JP); HOSHINO TERUO (JP); SIGA TUTOMU (JP); FUJITA YOSHIKI (JP); MITANI KENZO (JP)  
**IC** - (A) F16C-035/00 H02K-005/16  
**AP** - US15268793 19931116 [1993US-0152687]  
**PR** - US15268793 19931116 [1993US-0152687]  
JP14548387 19870610 [1987JP-0145483]  
JP14548487 19870610 [1987JP-0145484]  
US20397288 19880608 [1988US-0203972]  
**EC** - F16C-033/62  
H02K-005/173C  
**PCL** - ORIGINAL (O) : 310090000; CROSS-REFERENCE (X) : 029898140  
310042000  
**DT** - Corresponding document

1 / 1 *LEGALI - ©EPO*  
**PN** - US5422524 A 19950606 [US5422524]  
**AP** - US15268793 19931116 [1993US-0152687]  
**ACTE** - 19980126 US/AS01-A  
CHANGE OF NAME  
OWNER: DENSO CORPORATION 1-1, SHOWA-CHO KARIYA-SHI, AICHI;  
EFFECTIVE DATE: 19970807  
  
19980126 US/AS01-A  
CHANGE OF NAME  
OWNER: NIPPONDENSO CO., LTD.; EFFECTIVE DATE: 19970807  
  
19980421 US/RF-A  
REISSUE APPLICATION FILED  
EFFECTIVE DATE: 19970605  
  
20020408 US/AS-A  
ASSIGNMENT  
OWNER: DENSO CORPORATION 1-1, SHOWA-CHO, KARIYA-SHI AICHI;  
EFFECTIVE DATE: 19970807  
CHANGE OF NAME;ASSIGNOR:NIPPONDENSO CO.,  
LTD.;REEL/FRAME:012762/0568  
  
20020806 US/RF-A  
REISSUE APPLICATION FILED  
EFFECTIVE DATE: 20020109  
**UP** - 2004-44

6 / 6 *PLUSPAT - ©QUESTEL-ORBIT - image*  
**PN** - USRE37967 E1 20030121 [USRE37967]  
**STG** - (E1) Reissue Patent

4/11/05

US 5,422,524

10/040627

**TI** - (E1) Antifriction bearing and alternator incorporating same for use in vehicles  
**PA** - (E1) KOYO SEIKO CO (JP); DENSO CORP (JP)  
**PA0** - Koyo Seiko Company, Ltd., Osaka [JP]  
Denso Corporation, Kariya [JP]  
**IN** - (E1) KITAMURA MASAYUKI (JP); MIYAZAKI HIROYUKI (JP); NAKAMURA SIGENOBU (JP); HOSHINO TERUO (JP); SIGA TUTOMU (JP); FUJITA YOSHIKI (JP); MITANI KENZO (JP)  
**IC** - (E1) F16C-035/00 H02K-005/16  
**AP** - US86984497 19970605 [1997US-0869844]  
**PR** - US86984497 19970605 [1997US-0869844]  
JP14548387 19870610 [1987JP-0145483]  
JP14548487 19870610 [1987JP-0145484]  
US15268793 19931116 [1993US-0152687]  
US20397288 19880608 [1988US-0203972]  
**EC** - F16C-033/62  
H02K-005/173C  
**PCL** - ORIGINAL (O) : 310090000; CROSS-REFERENCE (X) : 029898140  
310042000  
**DT** - Corresponding document  
**UP** - 2003-05


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<u>w/N</u>	within N words
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<u>pre /N</u>	precedes by N words
<u>w/p</u>	in same paragraph
<u>not w/p</u>	not in same paragraph
<u>w/seg</u>	in same segment
<u>not w/seg</u>	not in same segment
<u>w/s</u>	in same sentence
<u>not w/s</u>	not in same sentence
<u>and not</u>	and not

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not w/seg	not in same segment
w/s	in same sentence
not w/s	not in same sentence
and not	and not

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not w/seg	not in same segment
w/s	in same sentence
not w/s	not in same sentence
and not	and not

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RE37,967

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Terms: **37967** ([Edit Search](#))

869844 (08) RE 37967 January 21, 2003

UNITED STATES PATENT AND TRADEMARK OFFICE GRANTED PATENT

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January 21, 2003

Antifriction bearing and alternator incorporating same for use in vehicles

**INVENTOR:** Nakamura, Sigenobu - Anjo, Japan (JP); Siga, Tutomu - Aichi-ken, Japan (JP); Mitani, Kenzo - Obu, Japan (JP); Fujita, Yoshiaki - Osaka, Japan (JP); Kitamura, Masayuki - Osaka, Japan (JP); Miyazaki, Hiroyuki - Osaka, Japan (JP); Hoshino, Teruo - Osaka, Japan (JP)

**APPL-NO:** 869844 (08)

**FILED-DATE:** June 5, 1997

**GRANTED-DATE:** January 21, 2003

**PRIORITY:** June 10, 1987 - 62145483, Japan (JP); June 10, 1987 - 62145484, Japan (JP)

**ASSIGNEE-AT-ISSUE:** Koyo Seiko Co., Ltd., Osaka, Japan (JP), 03  
Denso Corporation, Kariya, Japan (JP), 03

**LEGAL-REP:** Jacobson Holman PLLC

**PUB-TYPE:** January 21, 2003 - Reissue Patent (E1)

**PUB-COUNTRY:** United States (US)

**REL-DATA:**

Reissue of: 08/152687, November 16, 1993, PENDING 05422524, June 6, 1995

**US-MAIN-CL:** 310#90

**US-ADDL-CL:** 310#42, 29#898.14

**CL:** 310, 29

**SEARCH-FLD:** 310#90, 310#42, 029#898.14

**IPC-MAIN-CL:** 7F 16C035#0


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37967

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### Search Connectors

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#### Syntax Definition

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<u>or</u>	or
<u>w/N</u>	within N words
<u>not w/N</u>	not within N words
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<u>not w/p</u>	not in same paragraph
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<u>not w/seg</u>	not in same segment
<u>w/s</u>	in same sentence
<u>not w/s</u>	not in same sentence
<u>and not</u>	and not

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Search statement 1

Query/Command : re37967/pn

\*\* SS 3: Results 1

Search statement 4

Query/Command : prt fu legalall max

1 / 1    PLUSPAT - ©QUESTEL-ORBIT - image  
PN - USRE37967 E1 20030121 [USRE37967]  
TI - (E1) Antifriction bearing and alternator incorporating same for use in vehicles  
PA - (E1) KOYO SEIKO CO (JP); DENSO CORP (JP)  
PA0 - Koyo Seiko Company, Ltd., Osaka [JP]  
Denso Corporation, Kariya [JP]  
IN - (E1) KITAMURA MASAYUKI (JP); MIYAZAKI HIROYUKI (JP); NAKAMURA SIGENOBU (JP); HOSHINO TERUO (JP); SIGA TUTOMU (JP); FUJITA YOSHIKI (JP); MITANI KENZO (JP)  
AP - US86984497 19970605 [1997US-0869844]  
FD - Reissue of: US5422524 - 19950606  
PR - US86984497 19970605 [1997US-0869844]  
JP14548387 19870610 [1987JP-0145483]  
JP14548487 19870610 [1987JP-0145484]  
US15268793 19931116 [1993US-0152687]  
US20397288 19880608 [1988US-0203972]  
IC - (E1) F16C-035/00 H02K-005/16  
EC - F16C-033/62  
H02K-005/173C  
PCL - ORIGINAL (O) : 310090000; CROSS-REFERENCE (X) : 029898140  
310042000  
DT - Corresponding document  
CT - US4191599; US4240682; US4323401; US4429924; US4476405; US4546280;  
US4634908; US4696581; US4808226; AT362807; GB1361553; JP56-34615  
Okamoto et al., Effect of SI and Retained Austenite on the Rolling Fatigue Life of Bearing Steel, Seititsu Kenkyu, No. 277, 1973.\*

Tsushima et al., "Improvement of Rolling Contact Fatigue Life of Carburized Tapered Rolling Bearings", SAE Technical Paper 860725, Apr. 1986.\*

Patent Abstracts of Japan, unexamined applications, section C, vol. 12, No. 82 (c-481), Mar. 15, 1988.

"Zwischenstufenumwandlung von Walzlagerstählen," WTS 74 06 20, SKF Kugellagerfabriken GmbH (Feb. 1974).

E. Yamija et al., "Effects of Retained Austenite on the Rolling Fatigue Life of Ball Bearing Steels," translation of article published in J. Japan Inst. Metals, vol. 36, p. 711 (1972).

Handbook of Metals, Japan Metal Society, Maruzen Co., Ltd. (Rev. 4th Ed., 1982), sections 7.6.1-7.6.2.

**STG** - (E1) Reissue Patent

**AB** - An antifriction bearing includes a fixed ring which comprises a steel containing up to about 10% of residual austenite. An alternator for vehicles includes a stator mounted on a frame, a rotor having its rotary shaft rotatably supported by a pair of bearings on the frame and a drive pulley mounted on one end of the shaft projecting outward from the frame. The outer ring of at least the bearing toward the pulley comprises a steel containing up to about 10% of residual austenite.

**UP** - 2003-05

Search statement 4

Query/Command : fam re37967/pn

1 Patent Groups

\*\* SS 4: Results 6

Search statement 5

Query/Command : famstate nonstop

1 / 6 PLUSPAT - @QUESTEL-ORBIT

**PN** - DE3851573 D1 19941027 [DE3851573]

**STG** - (D1) Granted EP number in bulletin

**OTI** - (D1) Reibungsloses Lager und mit einem solchen Lager ausgerüsteter Fahrzeugalternator.

**PA** - (D1) NIPPON DENSO CO (JP); KOYO SEIKO CO (JP)

**IN** - (D1) NAKAMURA SIGENOBU (JP); SIGA TUTOMU (JP); MITANI KENZO (JP); FUJITA YOSHIKI (JP); KITAMURA MASAYUKI (JP)

**IC** - (D1) F16C-033/62 H02K-005/173

**PN2** - DE3851573 T2 19950323 [DE3851573]

**STG2** - (T2) Trans. Of EP patent

**OTI2** - (T2) Reibungsloses Lager und mit einem solchen Lager ausgerüsteter Fahrzeugalternator.

**PA2** - (T2) NIPPON DENSO CO (JP); KOYO SEIKO CO (JP)

**IN2** - (T2) NAKAMURA SIGENOBU (JP); SIGA TUTOMU (JP); MITANI KENZO (JP); FUJITA YOSHIKI (JP); KITAMURA MASAYUKI (JP)

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**PN** - DE3851573 D1 19941027 [DE3851573]DE3851573 T2 19950323 [DE3851573]

**AP** - DE3851573 19880609 [1988DE-3851573]

**ACTE** - 19950921 DE/8363-A [-]

OPPOSITION AGAINST THE PATENT

20000120 DE/8331-A [-]  
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2 / 6 *PLUSPAT - ©QUESTEL-ORBIT - image*  
**PN** - EP0294813 A2 19881214 [EP-294813]  
**STG** - (A2) Publ. Of applic. Without search report  
**TI** - (A2) Antifriction bearing and alternator incorporating same for use in vehicles.  
**OTI** - (A2) Reibungsloses Lager und mit einem solchen Lager ausgerüsteter Fahrzeugalternator.  
           (A2) Palier antifriction et alternateur de véhicule comprenant un tel palier.  
**PA** - (A2) KOYO SEIKO CO (JP); NIPPON DENSO CO (JP)  
**IN** - (A2) KITAMURA MASAYUKI; NAKAMURA SIGENOBU; SIGA TUTOMU; FUJITA YOSHIKI; MITANI KENZO  
**IC** - (A2) F16C-033/62 H02K-005/173  
**PN2** - EP0294813 A3 19900110 [EP-294813]  
**STG2-** (A3) Publi. Of search report  
**TI2** - (A3) ANTIFRICTION BEARING AND ALTERNATOR INCORPORATING SAME FOR USE IN VEHICLES  
**PN3** - EP0294813 B1 19940921 [EP-294813]  
**STG3-** (B1) Patent  
**TI3** - (B1) Antifriction bearing and alternator incorporating same for use in vehicles.  
**OTI3-** (B1) Reibungsloses Lager und mit einem solchen Lager ausgerüsteter Fahrzeugalternator.  
           (B1) Palier antifriction et alternateur de véhicule comprenant un tel palier.  
**PA3** - (B1) KOYO SEIKO CO (JP); NIPPON DENSO CO (JP)  
**IN3** - (B1) KITAMURA MASAYUKI (JP); NAKAMURA SIGENOBU (JP); SIGA TUTOMU (JP); FUJITA YOSHIKI (JP); MITANI KENZO (JP)  
**IC3** - (B1) F16C-033/62 H02K-005/173  
**LA** - ENGLISH (ENG)  
**AP** - EP88109225 19880609 [1988EP-0109225]  
**PR** - JP14548387 19870610 [1987JP-0145483]  
           JP14548487 19870610 [1987JP-0145484]  
**EC** - F16C-033/62  
           H02K-005/173C  
**DS** - DE FR GB IT  
**DT** - Basic

1 / 1 *LEGALI - ©EPO*  
**PN** - EP0294813 A2 19881214 [EP-294813]EP0294813 A3 19900110 [EP-294813]EP0294813 B1 19940921 [EP-294813]  
**AP** - EP88109225 19880609 [1988EP-0109225]  
**ACTE-** 19881214 EP/AK-A [+]  
           DESIGNATED CONTRACTING STATES:  
           DE FR GB IT  
  
           19900110 EP/AK-A [+]  
           DESIGNATED CONTRACTING STATES:  
           DE FR GB IT  
  
           19900620 EP/17P-A [+]  
           REQUEST FOR EXAMINATION FILED  
           EFFECTIVE DATE: 19900421

19911211 EP/17Q-A [+]  
 FIRST EXAMINATION REPORT  
 EFFECTIVE DATE: 19911024

19940921 EP/AK-A [+]  
 DESIGNATED CONTRACTING STATES:  
 DE FR GB IT

19941027 EP/REF-A  
 CORRESPONDS TO:  
 (DE 3851573 19941027 [DE3851573])

19941110 EP/ET-A [+]  
 FR: TRANSLATION FILED

19941206 EP/ITF-A [+]  
 IT: TRANSLATION FOR A EP PATENT FILED  
 OWNER: STUDIO TORTA SOCIETA' SEMPLICE

19950816 EP/26-A [-]  
 OPPOSITION FILED  
 OPPONENT: AB SKF; EFFECTIVE DATE: 19950619

19991215 EP/GBPR-A [-]  
 GB: PATENT REVOKED UNDER ART. 102 OF THE EP CONVENTION DESIGNATING  
 THE UK AS CONTRACTING STATE  
 991024

19991215 EP/27W-A [-]  
 REVOKED  
 EFFECTIVE DATE: 19991024

UP - 2004-06

3 / 6 PLUSPAT - ©QUESTEL-ORBIT  
 PN - JP63308218 A 19881215 [JP63308218]  
 STG - (A) Doc. Laid open to publ. Inspec.  
 TI - (A) ROLLING BEARING  
 PA - (A) KOYO SEIKO CO; NIPPON DENSO CO  
 PA0 - (A) KOYO SEIKO CO LTD; NIPPON DENSO CO LTD  
 IN - (A) KITAMURA MASAYUKI; MIYAZAKI HIROYUKI; HOSHINO TERUO; FUJITA YOSHIKI; NAKAMURA SHIGENOBU; MITANI KENZOU; SHIGA TSUTOMU  
 IC - (A) F16C-033/62  
 AP - JP14548387 19870610 [1987JP-0145483]  
 PR - JP14548387 19870610 [1987JP-0145483]

4 / 6 PLUSPAT - ©QUESTEL-ORBIT - image  
 PN - JP63308219 A 19881215 [JP63308219]  
 STG - (A) Doc. Laid open to publ. Inspec.  
 TI - (A) AC GENERATOR FOR VEHICLE  
 PA - (A) NIPPON DENSO CO; KOYO SEIKO CO  
 PA0 - (A) NIPPON DENSO CO LTD; KOYO SEIKO CO LTD  
 IN - (A) NAKAMURA SHIGENOBU; MITANI KENZOU; SHIGA TSUTOMU; KITAMURA MASAYUKI; FUJITA YOSHIKI  
 IC - (A) F16C-033/62 H02K-007/08  
 PN2 - JP7072565 B 19950802 [JP95072565]  
 STG2- (B) Publd. Examined patent applic.  
 IC2 - (B) F16C-033/62  
 AP - JP14548487 19870610 [1987JP-0145484]  
 PR - JP14548487 19870610 [1987JP-0145484]

5 / 6 *PLUSPAT - ©QUESTEL-ORBIT - image*  
**PN** - US5422524 A 19950606 [US5422524]  
**STG** - (A) United States patent  
**TI** - (A) Antifriction bearing and alternator incorporating same for use in vehicles  
**PA** - (A) KOYO SEIKO CO (JP); NIPPON DENSO CO (JP)  
**PAO** - Koyo Seiko Company, Ltd., Osaka [JP]  
 Nippondenso Company, Ltd., Osaka [JP]  
**IN** - (A) KITAMURA MASAYUKI (JP); MIYAZAKI HIROYUKI (JP); NAKAMURA SIGENOBU (JP); HOSHINO TERUO (JP); SIGA TUTOMU (JP); FUJITA YOSHIKI (JP); MITANI KENZO (JP)  
**IC** - (A) F16C-035/00 H02K-005/16  
**AP** - US15268793 19931116 [1993US-0152687]  
**PR** - US15268793 19931116 [1993US-0152687]  
 JP14548387 19870610 [1987JP-0145483]  
 JP14548487 19870610 [1987JP-0145484]  
 US20397288 19880608 [1988US-0203972]  
**EC** - F16C-033/62  
 H02K-005/173C  
**PCL** - ORIGINAL (O) : 310090000; CROSS-REFERENCE (X) : 029898140  
 310042000  
**DT** - Corresponding document

1 / 1 *LEGALI - ©EPO*  
**PN** - US5422524 A 19950606 [US5422524]  
**AP** - US15268793 19931116 [1993US-0152687]  
**ACTE** - 19980126 US/AS01-A  
 CHANGE OF NAME  
 OWNER: DENSO CORPORATION 1-1, SHOWA-CHO KARIYA-SHI, AICHI;  
 EFFECTIVE DATE: 19970807  
  
 19980126 US/AS01-A  
 CHANGE OF NAME  
 OWNER: NIPPONDENSO CO., LTD.; EFFECTIVE DATE: 19970807  
  
 19980421 US/RF-A  
 REISSUE APPLICATION FILED  
 EFFECTIVE DATE: 19970605  
  
 20020408 US/AS-A  
 ASSIGNMENT  
 OWNER: DENSO CORPORATION 1-1, SHOWA-CHO, KARIYA-SHI AICHI;  
 EFFECTIVE DATE: 19970807  
 CHANGE OF NAME;ASSIGNOR:NIPPONDENSO CO.,  
 LTD.;REEL/FRAME:012762/0568  
  
 20020806 US/RF-A  
 REISSUE APPLICATION FILED  
 EFFECTIVE DATE: 20020109  
**UP** - 2004-44

6 / 6 *PLUSPAT - ©QUESTEL-ORBIT - image*  
**PN** - USRE37967 E1 20030121 [USRE37967]  
**STG** - (E1) Reissue Patent  
**TI** - (E1) Antifriction bearing and alternator incorporating same for use in vehicles

4/11/05

US RE 37,967

10/040627

**PA** - (E1) KOYO SEIKO CO (JP); DENSO CORP (JP)  
**PA0** - Koyo Seiko Company, Ltd., Osaka [JP]  
Denso Corporation, Kariya [JP]  
**IN** - (E1) KITAMURA MASAYUKI (JP); MIYAZAKI HIROYUKI (JP); NAKAMURA  
SIGENOBU (JP); HOSHINO TERUO (JP); SIGA TUTOMU (JP); FUJITA  
YOSHIKI (JP); MITANI KENZO (JP)  
**IC** - (E1) F16C-035/00 H02K-005/16  
**AP** - US86984497 19970605 [1997US-0869844]  
**PR** - US86984497 19970605 [1997US-0869844]  
JP14548387 19870610 [1987JP-0145483]  
JP14548487 19870610 [1987JP-0145484]  
US15268793 19931116 [1993US-0152687]  
US20397288 19880608 [1988US-0203972]  
**EC** - F16C-033/62  
H02K-005/173C  
**PCL** - ORIGINAL (O) : 310090000; CROSS-REFERENCE (X) : 029898140  
310042000  
**DT** - Corresponding document  
**UP** - 2003-05


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37,967))
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<u>or</u>	or
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<u>not w/N</u>	not within N words
<u>pre /N</u>	precedes by N words
<u>w/p</u>	in same paragraph
<u>not w/p</u>	not in same paragraph
<u>w/seg</u>	in same segment
<u>not w/seg</u>	not in same segment
<u>w/s</u>	in same sentence
<u>not w/s</u>	not in same sentence
<u>and not</u>	and not

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37,967) or ((reissu! or (re pre/1 issu!)) and (37967 or  
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#### Syntax Definition

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or	or
w/N	within N words
not w/N	not within N words
pre /N	precedes by N words
w/p	in same paragraph
not w/p	not in same paragraph
w/seg	in same segment
not w/seg	not in same segment
w/s	in same sentence
not w/s	not in same sentence
and not	and not

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37,967) or ((reissu! or (re pre/1 issu!)) and (37967 or  
37,967))
```

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<u>or</u>	or
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<u>not w/p</u>	not in same paragraph
<u>w/seg</u>	in same segment
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<u>w/s</u>	in same sentence
<u>not w/s</u>	not in same sentence
<u>and not</u>	and not

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